

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) ~~Method~~ A method of selecting , from among N "Spatial Video CODECs" where N is an integer number greater than 1, the optimum "Spatial Video CODEC" for a same input signal I, ~~according to~~ comprising the following steps:

- obtaining from all the N "Spatial Video CODECs", for the same input signal I and a same quality parameter Q, ~~the a~~ a rate R and the distortion measures D, Q being an integer value between 0 and 100, defined by any rate-distortion algorithm to provide a compression of the input sequence with constant rate or with constant distortion, and
- calculating an optimality criterion by using the value  $L_n=f(R_n,D_n)$  calculated for all the  $n$  from 1 to N,  $n$  being the index of the "Spatial Video CODEC", where  $f(R_n,D_n)$  is a function of  $R_n$  and  $D_n$ , ~~characterized~~

~~in that wherein~~ the Spatial CODECs are aligned according to the theoretical MSE and the quality parameter Q, MSE being the Mean Square Error and is computed as

$$MSE = \frac{\Delta^2}{12} = \frac{(2^{(C_1-Q/C_2)})^2}{12} \text{ for the case of uniform quantization with an average step } \Delta$$

defined as  $\Delta = 2^{(C_1-Q/C_2)}$  where  $C_1$  controls the minimal and maximal quality and  $C_2$  the variation of the distortion according to quality parameter Q,

~~in that wherein~~ the optimally criterion is defined as the minimization of said value  $L_n=f(R_n,D_n)$ ,

in that the wherein said function is defined as the Lagrange optimization

$$f(R_n, D_n) = R_n + \lambda D_n,$$

in that he and wherein the Lagrange multiplier that weights the relative influence of

$$\text{the rate } R \text{ and of the distortion } D \text{ is defined as } \lambda = \frac{1}{2 \cdot \ln(2) \cdot MSE}.$$

2. (Currently Amended) ~~Method~~ The method according to claim 1, ~~characterized in that~~ wherein the input signal I is a natural image or a predicted image or any rectangular sub-block from a minimum size of 2x2 of the natural image or of the predicted image.

3. (Currently Amended) ~~Method~~ The method according to ~~one of the claims 1 to 2,~~ claim 1, wherein the rate R of the n-th "Spatial Video CODEC" is

$$\text{approximated by } R = \alpha \left( N_T - \sum_{\substack{|x_i| < \Delta \\ x_i = 0}} N_{x_i} \right), \text{ where } N_{x_i} \text{ is the number of coefficients with an}$$

amplitude equal to  $x_i$ ,  $N_T$  is the total number of coefficients, and the parameter  $\alpha$  is derived from experimental results.

4. (Currently Amended) ~~Method~~ The method according to ~~one of the claims 1 to 3,~~ claim 1, wherein the distortion D of the n-th "Spatial Video CODEC" is

$$\text{approximated by } D = \sum_{\substack{|x_i| < \Delta \\ x_i = 0}} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i| \geq \Delta} N_{x_i} \text{ where } x_i \text{ is the amplitude of the coefficients}$$

and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .

5. (New) The method according to claim 2, wherein the rate R of the  $n$ -th "Spatial

Video CODEC" is approximated by  $R = \alpha(N_T - \sum_{\substack{|x_i| < \Delta \\ x_i = 0}} N_{x_i})$ , where  $N_{x_i}$  is the number of

coefficients with an amplitude equal to  $x_i$ ,  $N_T$  is the total number of coefficients, and the parameter  $\alpha$  is derived from experimental results.

6. (New) The method according to claim 2, wherein the distortion D of the  $n$ -th

"Spatial Video CODEC" is approximated by  $D = \sum_{\substack{|x_i| < \Delta \\ x_i = 0}} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i| \geq \Delta} N_{x_i}$  where  $x_i$  is the

amplitude of the coefficients and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .

7. (New) The method according to claim 3, wherein the distortion D of the  $n$ -th

"Spatial Video CODEC" is approximated by  $D = \sum_{\substack{|x_i| < \Delta \\ x_i = 0}} x_i^2 N_{x_i} + \frac{\Delta^2}{12} \sum_{|x_i| \geq \Delta} N_{x_i}$  where  $x_i$  is the

amplitude of the coefficients and  $N_{x_i}$  is the number of coefficients with an amplitude of  $x_i$ .